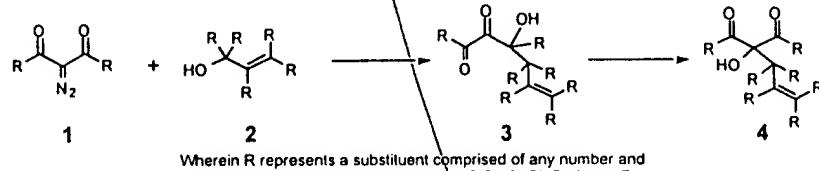


GLYCOSYLATED INDOLOCARBAZOLE SYNTHESIS

Abstract

Tertiary alcohols containing the structural features illustrated in 3 or 4 below (Scheme I) are prepared by reacting at least one diazo carbonyl compound, e.g., 1 in Scheme I) and at least one allylic alcohol (e.g., 2 in Scheme I) in a coupling reaction run under conditions that produce carbene or carbenoid intermediates from the diazo-containing substrate such as transition metal catalysis or either thermal or photochemical decomposition. In some preferred embodiments, $\text{Rh}_2(\text{OAc})_4$ is employed to catalyze the coupling reaction.

Scheme I



Indolocarbazoles (e.g., 7 below) are prepared by coupling of diazo carbonyl compounds (e.g., 5) and biindoles (e.g., 6). Indolocarbazoles are furanosylated (e.g., 7) with acetals (e.g., 8) or their open chain congeners (e.g., 9) under conditions known to promote acetal exchange or formation, such as protic or Lewis acids. Furanosylated indolocarbazoles (e.g., 10) are also prepared via ring contraction of pyranosylated indolocarbazoles (e.g., 11) under conditions known to effect oxidation and benzylic acid type rearrangements, and pyranosylated indolocarbazoles (e.g., 11) are prepared via ring expansion of the furanosylated congeners (e.g., 10).

Scheme II

